



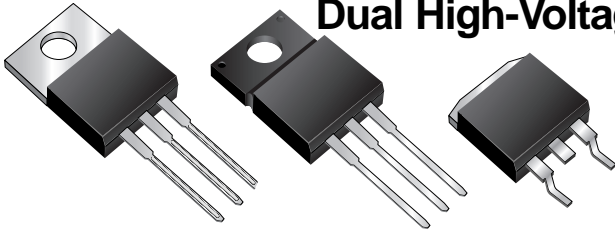
# MBR25HxxCT, MBRF25HxxCT & MBRB25HxxCT Series

New Product

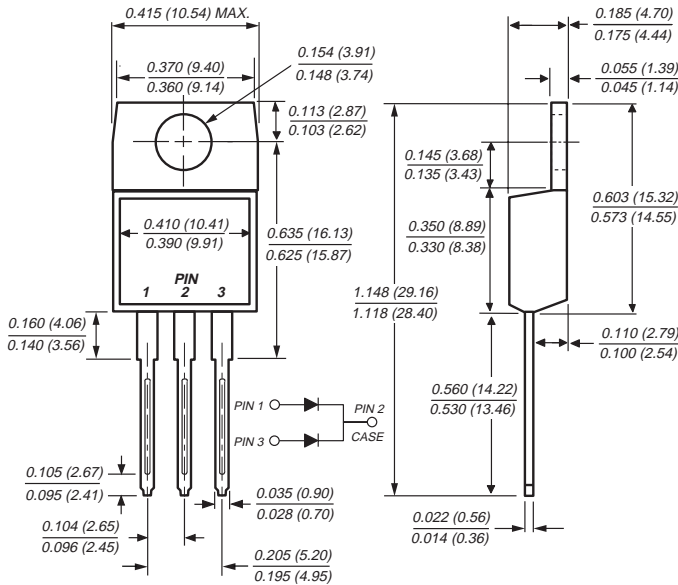
Vishay Semiconductors  
formerly General Semiconductor

## Dual High-Voltage Schottky Rectifiers

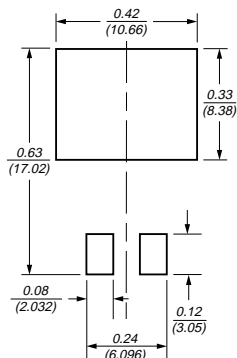
Reverse Voltage 35 to 60 V  
Forward Current 30 A



### TO-220AB (MBR25HxxCT)

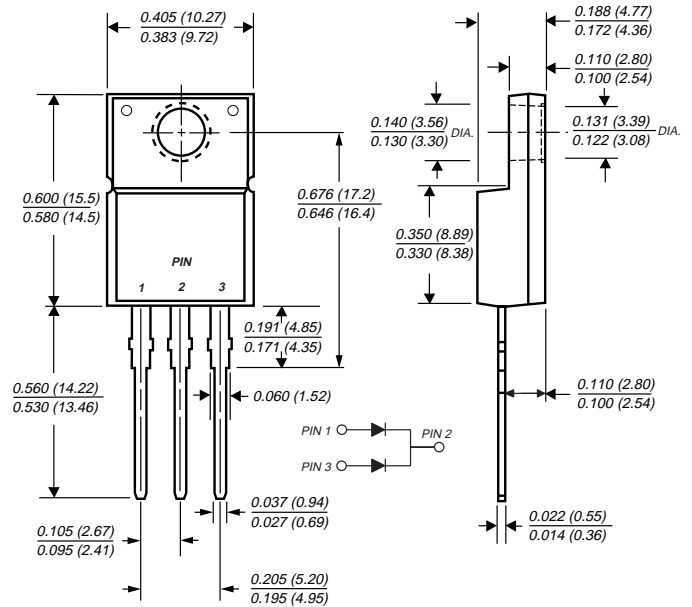


### Mounting Pad Layout TO-263AB

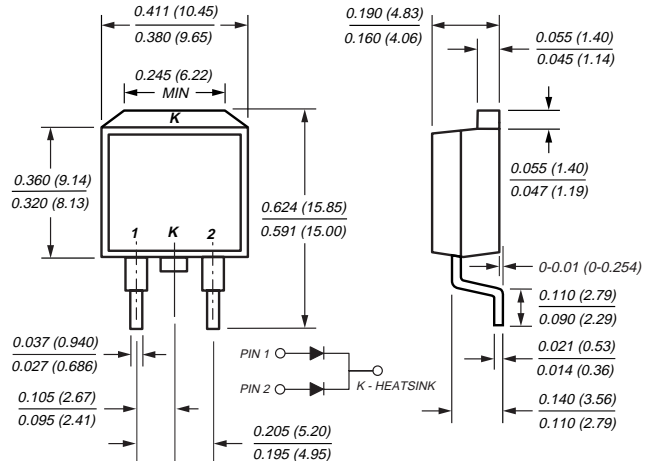


Dimensions in inches and (millimeters)

### ITO-220AB (MBRF25HxxCT)



### TO-263AB (MBRB25HxxCT)



## Mechanical Data

**Case:** JEDEC TO-220AB, ITO-220AB & TO-263AB molded plastic body

**Terminals:** Plated leads, solderable per MIL-STD-750, Method 2026

**High temperature soldering guaranteed:** 250 °C/10 seconds, 0.25" (6.35 mm) from case

**Polarity:** As marked **Mounting Position:** Any

**Mounting Torque:** 10 in-lbs maximum

**Weight:** 0.08 oz., 2.24 g

## Features

- Plastic package has Underwriters Laboratory Flammability Classification 94 V-0
- Dual rectifier construction, positive center tap
- Metal silicon junction, majority carrier conduction
- Low forward voltage drop, low power loss and high efficiency
- Guardring for overvoltage protection
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- Rated for reverse surge and ESD
- 175 °C maximum operation junction temperature

# MBR25HxxCT, MBRF25HxxCT & MBRB25HxxCT Series



Vishay Semiconductors  
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## Maximum Ratings (T<sub>C</sub> = 25°C unless otherwise noted)

Parameter	Symbol	MBR25H35CT	MBR25H45CT	MBR25H50CT	MBR25H60CT	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	35	45	50	60	V
Working peak reverse voltage	V <sub>RWM</sub>	35	45	50	60	V
Maximum DC blocking voltage	V <sub>DC</sub>	35	45	50	60	V
Max. average forward rectified current (see fig. 1) <i>Total device Per leg</i>	I <sub>F(AV)</sub>	30 15				A
Peak repetitive forward current at T <sub>C</sub> = 150°C (rated V <sub>R</sub> , 20KHz sq. wave)	I <sub>FRM</sub>	30				A
Non-repetitive avalanche energy per leg at 25°C, I <sub>AS</sub> = 4A, L = 10mH	E <sub>AS</sub>	80				mJ
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) per leg	I <sub>FSM</sub>	150				A
Peak repetitive reverse surge current per leg at t <sub>p</sub> = 2.0μs, 1KHz	I <sub>R</sub> RM	1.0		0.5		A
Peak non-repetitive reverse energy (8/20μs waveform)	E <sub>RS</sub> M	25		20		mJ
Electrostatic discharge capacitor voltage Human body model: C = 100pF, R = 1.5kΩ	V <sub>C</sub>	25				kV
Voltage rate of change (rated V <sub>R</sub> )	dv/dt	10,000				V/μs
Operating junction temperature range	T <sub>J</sub>	-65 to +175				°C
Storage temperature range	T <sub>STG</sub>	-65 to +175				°C
RMS Isolation voltage (MBRF type only) from terminals to heatsink with t = 1.0 second, RH ≤ 30%	V <sub>ISOL</sub>	4500 <sup>(1)</sup> 3500 <sup>(2)</sup> 1500 <sup>(3)</sup>				V

## Electrical Characteristics (T<sub>C</sub> = 25°C unless otherwise noted)

Parameter	Symbol	MBR25H35CT, MBR25H45CT, MBR25H50CT, MBR25H60CT				Unit
		Typ	Max	Typ	Max	
Maximum instantaneous forward voltage per leg <sup>(4)</sup> at I <sub>F</sub> = 15A T <sub>J</sub> = 25°C at I <sub>F</sub> = 15A T <sub>J</sub> = 125°C at I <sub>F</sub> = 30A T <sub>J</sub> = 25°C at I <sub>F</sub> = 30A T <sub>J</sub> = 125°C	V <sub>F</sub>	– 0.50 – 0.63	0.64 0.54 0.74 0.67	– 0.56 – 0.68	0.70 0.60 0.85 0.72	V
Maximum instantaneous reverse current at rated DC blocking voltage per leg <sup>(4)</sup>	I <sub>R</sub>	– 6.0	100 20	– 4.0	100 20	μA mA

## Thermal Characteristics (T<sub>C</sub> = 25°C unless otherwise noted)

Parameter	Symbol	MBR	MBRF	MBRB	Unit
Thermal resistance from junction to case per leg	R <sub>θJC</sub>	1.5	4.5	1.5	°C/W

### Notes:

- (1) Clip mounting (on case), where lead does not overlap heatsink with 0.110" offset  
 (2) Clip mounting (on case), where leads do overlap heatsink  
 (3) Screw mounting with 4-40 screw, where washer diameter is ≤ 4.9 mm (0.19")  
 (4) Pulse test: 300μs pulse width, 1% duty cycle

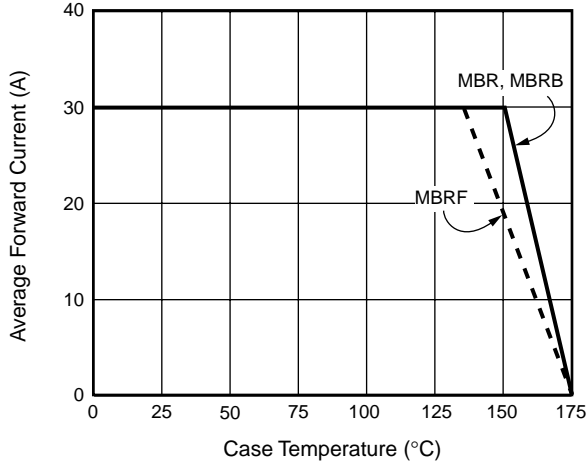
## Ordering Information

Product	Case	Package Code	Package Option
MBR25H35CT – MBR25H60CT	TO-220AB	45	Anti-Static tube, 50/tube, 2K/carton
MBRF25H35CT – MBRF25H60CT	ITO-220AB	45	Anti-Static tube, 50/tube, 2K/carton
MBRB25H35CT – MBRB25H60CT	TO-263AB	31	13" reel, 800/reel, 4.8K/carton
		45	Anti-Static tube, 50/tube, 2K/carton
		81	Anti-Static 13" reel, 800/reel, 4.8K/carton

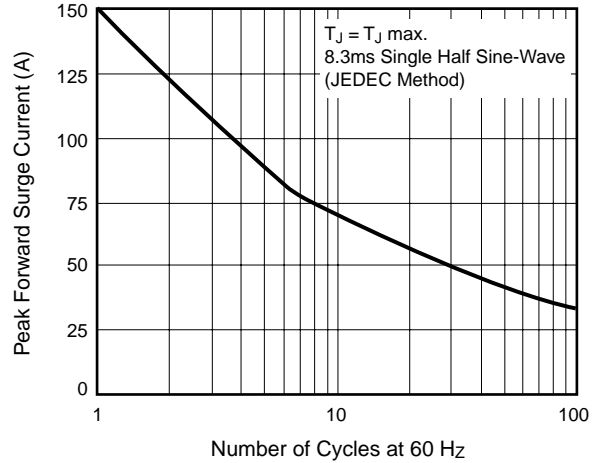


## Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

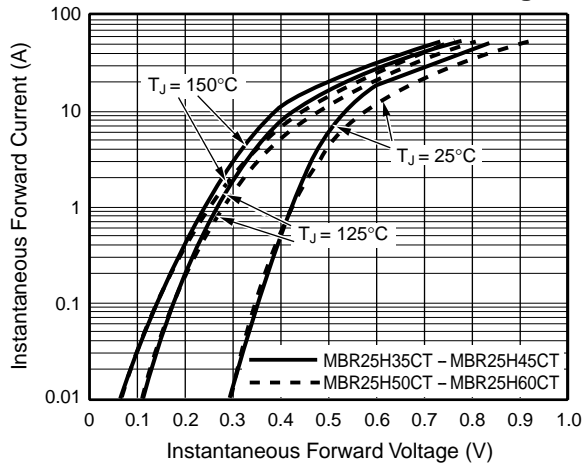
**Fig. 1 – Forward Current Derating Curve**



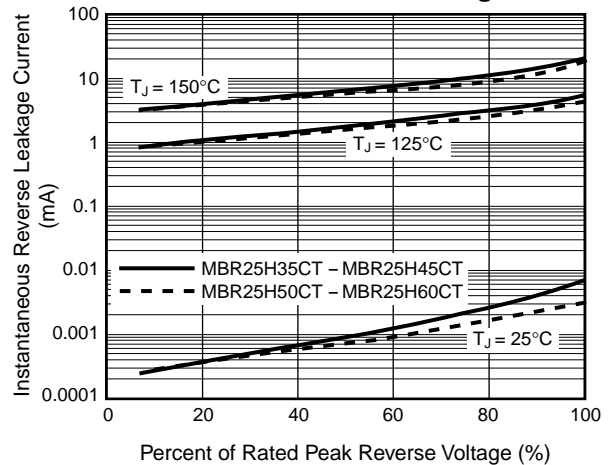
**Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current Per Leg**



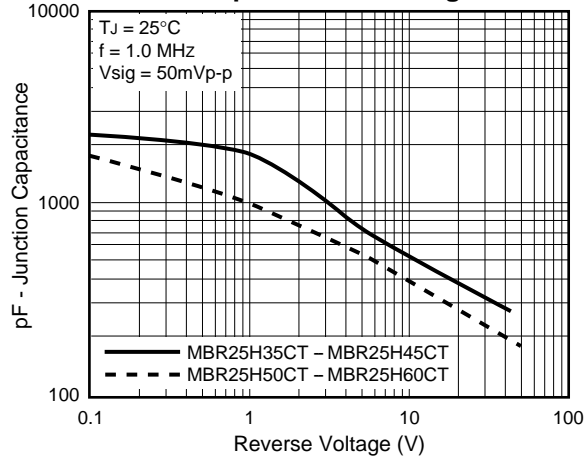
**Fig. 3 – Typical Instantaneous Forward Characteristics Per Leg**



**Fig. 4 – Typical Reverse Characteristics Per Leg**



**Fig. 5 – Typical Junction Capacitance Per Leg**



**Fig. 6 – Typical Transient Thermal Impedance Per Leg**

